Decentralising energy governance? Wales, devolution and the politics of energy infrastructure decision-making

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Abstract

Much can be learned about the scope for changing the trajectory of energy system development by examining the effects of governance re-scaling, and how this is negotiated by prevailing regimes of energy provision. To advance this proposition, this paper uses Barry's concept of 'technological zones'to analyse how devolution within the British state, to Wales has affected the politicisation and organisation of electricityinfrastructure decisions. The evidence presentedcentres on arguments about energy governance and devolution in two government inquiries. While logics of democratic accountability to Wales were asserted, along with argumentsfor more territorially integrated approaches to energy infrastructure decisions, the more dominant discourse emphasised swift and stable procedures to facilitate major investment and infrastructure delivery. The researchshows that while intensifying place-based conflicts and pressures for governance re-scaling potentially disrupt the reproduction of infrastructural systems they do not automatically do so, which should direct our attention to the conditions which shape their politicisation.

Key words: energy policy, infrastructure, devolution, politicisation, infrastructure, Wales

1.0 Introduction

On 11th May 2011, approximately 1500 people gathered on the steps of the National Assembly for Wales in Cardiff, the Senedd, protesting againstproposals to build numerouslarge wind farms and high voltage grid lines across tracts of rural Wales. Speakersaddressing the crowd drew analogies with previous rounds of exploitative resource development in Wales, notably the flooding of the Tryweryn Valley to create a reservoir to supply England with water, and questioned the appropriateness of the proposals: "Are we going to let them turn rural Wales into one gigantic power plant?"[1] The Welsh Government[2] defended their hand in the developments[3] – it was their planning strategy, 'Technical Advice Note 8' (WAG 2005), thathad encouraged the concentration of wind power into particular rural areas – and sought to contain the potential impacts(NAWESC 2012; Mason and Milbourne 2014). Threading through thecontroversy was the ambiguous issue of responsibility. At that time, the Welsh Government was not then responsible for consenting most major energy infrastructure projects,a situation presented by Welsh Ministers as intolerable: '(w)e cannot accept a position where decisions made outside Wales will lead to inappropriate development for the people of Wales'.[4]

On a *prima facie* basis, these events further illustrate the difficulties of promoting sustainable forms of energy. There is near-universal support for the replacement of carbon-intensive fossil fuels with other technologies, like renewables, but also recognition that such transitions present significant societal and political challenges (Verbong and Loorbach 2012). Also widely acknowledged is the challenge oforchestrating change across multiple governancescales; eachassociated with differing powers and territorial jurisdictions (Sovacool and Brown 2009; Goldthau 2014a).

However, two aspects of these challenges have beenless well studied. First, as Moss (2014) suggests, most transitions analysts focus on tracing energy system changes and treat the political context as something to be navigated; relatively few consider 'how ... infrastructure policy gets caught up in, and shaped by, broader, multi-scalar processes of national or even international politics' (2014, 1436; Hodson and Marvin 2013). This is an important omission, given that the intersections of government re-scaling and energy pathways can be revealing (Cowell et al 2015). One might expect the shifting territorialisation of governmentto disrupt energy systems, by providing opportunities to challenge the goals, practices, mechanisms and actorsthat govern them. Alternatively, if prevailing systems can accommodate such potential disruptions, this enhances our understanding of howcertain modes of provision maintain their dominance.Second, the protests at the Seneddshould prompt us to theorise more carefully about how infrastructure siting and consenting canaffectthe politics of energy system change.

These gaps in current knowledge set the objectives for this paper, which seeks to extend our understanding of energy transitions by examining the intersection between governance re-scaling, energy infrastructure development and politics. Its specific focus is the governance of energy infrastructure and devolution in the UK and Wales in particular. Attention is focused on electricity– new generating plant and grid networks –because electricity infrastructure epitomises material obduracy in energy systems yet is also embroiled in contested conceptions of future sustainability. Agendas favouringbulk power models (Szarka 2007), requiring the reproduction and expansion of industrial-scale electricity supply infrastructure unfold alongside arguments for decentralised systems, smaller-scale facilities and greater demand management (Goldthau 2014). There is also under-exploited analytical

value in locating theresearch within processes of political devolution, as observable across the British state since 1998. Typically, devolution is seen as impacting the vertical hierarchy of government; for example inserting a new tier of elected government for Wales.However, tracing the actual effects of devolution on the development of energy infrastructure can reveal the fragmentary nature of democratic control over technological systems at any given level.

Conceptually, an analytical framework is required that can interpret how technologies become political andhow the (re)territorialisation of infrastructural systems such as energy interfaces with the (re)territorialisation of formal political institutions like the state. The analysis here draws on the work of Andrew Barry (2001, 2002, 2006, 2013a, 2013b), especially his concept of 'technological zones' (2002, 2006). As this paper seeks to demonstrate, efforts to assert control over energy infrastructure in Wales should not be seen as just about hierarchies of formal control, but about the messy processes of creating governance boundaries within previously more homogenous technological zones, and whether doing so has effects that are political, in that they bring infrastructural objects into contingency and debate (Kuzemko 2014; Barry 2001).

The paper is structured as follows. After explaining the conceptual framework in more detail, the analysis proceeds to examine the data from Wales, focusing on a particular contentious issue: the question of who – the Welsh Government or the UK Government – should have the power to determine consents for major new electricity infrastructure (power stations and grid networks)?It begins byexamining the Welsh Government's efforts to steer wind energy developmentwithin its territory, and how connections between changing governance processes and industry decisions createda crisisthat increasingly

politicised the allocation of powers. This is followed by a discourse analysis of argumentation around the potential devolution of energy infrastructure consenting powers.The conclusion offer wider reflections on the intersection between energy transitions and governance re-scaling.

2.0 Understanding technologies, scale and the political

2.1 Scale in energy governance

Issues arising from the intersection of scientific and technical practices, their materialities and territorialisation have become of increased interest to a range of scholars (Marres and Lezaun 2011). This can be seen amongst energy researchers, and the recognition that understanding transitions in energy systems requires a grasp of the spatial dimensionsof change (Bridge et al 2013).Truffer and Coenen (2012) propose that the socio-technical regimes that constitute systems of energy provision should not be seen as monolithically coterminous with state structures but as cutting across and connecting different territories and scales, therebyunevenly distributingopportunities for actions that may stabilise or destabilise them (see also van der Vleuten and Hogselius 2012). This clearly affects the governance of energy systems, with governance understood as 'the institutions, mechanisms and processes through which … authority is exercised' (Goldthau 2014, 135). Nevertheless in seeking to connecttechnological governance, scale and politics, there can be a tendency to conceptualise these three elementsmainly in terms of multi-level governance i.e. to the distribution of powers betweenvertically and horizontally demarcated

institutions. Such frameworksmay help describethe distribution of authority, but questions remain about how to connect authority, territorial reach and the political.

Such issues are important within the emerging literature on 'techno-politics', concerned withthe connections between politics and technology or technical practices (Barry 2013a; Kama 2014). Theorists are responding *inter alia*to the ways in which the work ofFoucault and Latour, while offering useful tools for understanding the constitution of governance, have relatively little to say about political conflict (Barry 2001). Key questions concern the ways in which artefacts or practices become objects of contestation, how and where they become politicised, and how technologies play a role in (re)shaping the space of government.

One set of tools for addressing these questions is offered by Barry's concept of 'technological zones' (Barry 2001). These zones are new spaces of rule, within which steps have been taken to reduce differences between technical practices, procedures and forms, thus enabling comparisons, connections and the circulation of particular entities. They are, in effect, a governance device. In subsequent development of the idea, Barry (2006) proposed that 'technological zones'can take a number of forms, each serving to stabilise andenable the spatial extension of governance (see Table 1).

[Insert Table 1 somewhere near here]

Many applications of technological zones have focused on metrological and infrastructural zone. For example, Barry's own work has analysed efforts to harmonise European Union air quality standards (2001), with Faulkner (2009) charting the struggles to form a technological zone around tissue engineering regulation in the EU. Applications of technological zone

concepts to physical energy infrastructure are few but insightful, in suggesting how infrastructure construction and governance negotiates the exigencies of diverse settings.Willow and Wylie (2014) use technological zones to describe how fracking regulation insulates extraction practices from surrounding contexts. Kama (2014) used these conceptsto show how electricity connections between the Baltic states and Russiaaffectedthe design of the EU Emissions Trading Scheme (ETS) (see also Barry 2013a).

Applying technological zones offers a number of useful perspectives. One important facet is that technological zoneshave their own geographies, and may not necessarily be coterminous with national political territory (Faulkner 2009) or undifferentiated globalisation(Barry 2006, 239; Ong and Collier 2005). National governments can remain important actors in their construction - Kama (2014) shows the extension of carbon markets being brought into conflict with state sovereignty claims –but technological zones are not automatically territorially continuous or uniform(Barry 2001).Barry is also clear that theconstruction and extension of technological zones can be precarious, and these vulnerabilities can offer insights for analysts of change. By seeking to render things similar, they can constrain the identity of objects within them and therebyencounter resistance, both passive (from the material elements already in place) and active, social resistance (Barry 2006). Precariousness derives from the fact that technological zones are always a potentially fragile abstraction from the multiplicity of elements, forms and processes beyond the network, and with which they are in 'contingent, uneasy and unstable interrelationships' (Ong and Collier 2005, 12, cited in Barry 2006, 250).

Boundaries may be especially problem-prone (Kama 2014). Faulker (2009) explains how boundaries are intrinsic to the construction of technological zones, to define participants

and make associations between them possible, but also simultaneously (and often contentiously), creating new distinctions with non-participants. At the ends of technological zones, in such boundary areas, where power as translation (Latour 1986) becomes more contested and ambiguous (Barry 2013b, 429), one is more likely to encounter different perspectives: 'uncertainties and anxieties about what may be possible or desirable' (Barry 2001, 52). Technological zones are always therefore needing renegotiation and repair, and boundaries can be a particular focus for such work. Moreover, whereas Barry tends to present metrological zones, infrastructural zones and zones of qualification as different forms, it is useful to see something like a system of energy provision as a composite, bundling together different forms of technological zone, each with different reach and vulnerabilities.

One can seehow the 'development and extension of technological zones' becomes'an increasingly critical site for political negotiation and conflict' (Barry 2006, 250).But to recognise this entails delineating carefully how, when and where technologies acquire political effects (Marres and Lezaun 2011). An important dynamic is the extent to which actors involved are able to contain potentialpoliticization. Following Barry (2002), politicization and depoliticization are not straightforwardly equivalent to placing deliberations inside and outside respectively of the arenas of formal political institutions. If 'the political' is seen as 'an index of the space of contestation' (Barry 2001, 194), then one can see how the machineries of (formal)politics can facilitate smooth governance. After all, politics can serve .both 'contestation and the containment of contestation' (Barry 2002, p.270; Smith and Stirling 2007), accomplished by 'placing limits on the possibilities for debate and confrontation' (*op cit*.). This nexus between infrastructure and the political

offers opportunities to more closely connect analyses of energy system transitions and political processes.

2.2 Siting conflicts and infrastructural development

There is a surprising void in existing research between analyses of energy transitionsand the construction of new infrastructure and their associatedprocesses of siting, planning and consenting.Publicopposition to new energy facilitieshas long-generated research into 'siting controversies' (Gregory 1971), yet muchof this positions such controversiessimply as problems to solve (Aitken 2010), rarelyquestioning how processes of siting and consenting new infrastructure relate to the wider reproduction of systems of provision. The energy transitions literature meanwhilerarely gives prominence to infrastructuresiting (though see Murphy and Smith 2013); reflecting perhaps a tendency to focus on technological innovation (Cooke 2010).However, the history of energy development is full of instances where siting conflicts over new facilities become fulcrums for the wider contestation of the direction of development (e.g.Owens 1985; Sovacool and Cooper 2013).

To connect infrastructure siting more centrally with issues of development trajectory, we might turn to a particular form (or dimension) of technological zones – 'zones of qualification'; the processes of evaluation and transparency created to ensure that the qualities of objects and practices can be assessed, against more or less common criteria (Barry 2001). Amongst Barry's concepts, zones of qualification have received less attention from researchers, and their application to the consenting processes surrounding energy

infrastructure requires care. In conjunction with the creation of standard systems of assessment, zones of qualification also often require openness to external input, validation and scrutiny as well as expert, technicalanalysis (Barry 2006). So, processes for assessing the impacts of new energy facilities may include provision for consulting affected communities, representative institutions, and expert bodies. Moreover, consenting processes often bundle together multiple zones of qualification: - environmental impact assessment, planning consent, pollution control etc. The challenge in viewing these kinds of processes as zones of qualification is the difficulties entailed in making such processes consistent across space, requiring as they do (i) the evaluation of specific projects and their impacts in relation to diverse heterogeneous contextual conditions, (ii) often through procedures that are decentralised (e.g. operated by local or multiple governments), in which (iii) the need to weigh different kinds of impacts makes discretion difficult to eradicate. One can see the challenges that zones of qualification represent to the smooth operation of technological zones. Indeed, it helpsexplain why land use planning in the UK is often represented, pejoratively, as a 'blockage' to the delivery of 'necessary' energy infrastructure (Ellis et al 2009).

What can make infrastructure development particularly problematic is that infrastructure projects can render otherwise abstract policies for energy delivery, decarbonisation or markets into more visible, tangible forms, making them a key moment for public engagement and the potential politicisation of the underlying policy (Hajer 2003; Callon et al 2009; Owens and Cowell 2010). However, such processes do not necessarily become political. Zones of qualification such as consenting procedures are also domains in which much effort is made to stage and channel debate. Governments may act to parametise

decisions, perhaps to give pre-eminence to particular spatial and qualitative standards for the acceptability of development (Barry 2006; Aitkenet al 2008). They may pull decisions into arenas that are more or less likely to admit diverse considerations to enter decisions. Indeed, moves have been underway in an array of countries to 'streamline' decision-making for major infrastructure, by instituting strict time frames for stages of the process, or debarring discussion of 'need' in individual project consenting (Cowell and Owens 2006).

We can see therefore how the multiplicity of elements potentially brought into contention in infrastructure decision-making means that stabilising and standardising zones of qualification is problematic.Struggle may be especially likely where technological zones encounter shifting political jurisdictions, which bring new pressures to bear on their spatial extension and organisation. This can be shown from the empirical focus of this paper, where devolution precipitated a re-territorialisation of zones of qualification around electricity network development that previously extended across England and Wales, with uncertain and contested consequences.

3.0 Methodology

The research presented heretraces the efforts of the Welsh Governmentto steer major electricity infrastructure development within its territory. The electricity supply system of the UK is highly complex, interlacing practices for generating and distributing electricity with supply and other services, and the focus here is on a specific aspect: the incorporation of new renewable electricity generation infrastructures, especially on-shore wind, and associated network connections. Conflicts around wind energy development helped set the

agenda for two major inquiries: the National Assembly for Wales Environment and Sustainability Committee Inquiry into Energy Policy and Planning in Wales (hereafter the NAWInquiry), that ran from July 2011 and reported in June 2012, and the Commission on Devolution in Wales (hereafter the Silk Commission), which was established in October 2011 and finished reporting in March 2014.[5] How to address a mounting sense of mismatch between the impacts of energy infrastructure development inWales, and the powers of the Welsh Government to control them,attracted discussion in each.

The research draws on two sets of data. The main set is data from the two inquiries, taken from submitted written evidence, minutes and transcripts of the cross-examination of expert witnesses, and final inquiry reports.[6] This is supplemented by twenty-five semi-structured interviews conducted between 2007 and 2013 with senior figures from government in Wales, the electricity industry, environmental bodies and community groups. Together these sources allowed a discourse analysis to be conducted of the arguments circulating around the potential rescaling of energy infrastructure consenting powers and the qualities this zone of qualification should exhibit: who did the various parties believe to be best placed to govern energy infrastructure development in Wales, and why?; how should decision-making processes be exercised, and what does this reveal about the logics that hold the system of provision together? By following these inquiries through to their conclusions and outcomes, it can be observedwhich arguments (and actors)exerted greatest leverage.

4.0 Renewable electricity infrastructurein Wales

4.1 The creation of crisis

For most of the twentieth century, the history of electricity infrastructure development in Wales could be summarised as the creation of technological zones – metrological, infrastructural and of qualification - characterised by accreting technical and political integration with England. Under nationalisation, key powers for electricity governance were held by the UK central government, with grid and generation infrastructuredelivered by nationalised industries that treated England and Wales as a single system. Privatisation from the end of the 1980s fragmented these arrangements, but central government retained control of key policy levers, either directly or via oversight of national market regulators. One sphere of continuity concerned the power to issue consents for major electricity infrastructure–defined as major grid lines and electricity generating stations over 50MW – which was retained by central government. This scalar demarcation was never justified with precision, but its principal basis was that 'major' infrastructure was 'nationally important' (at UK level), and needed to be determined centrallyto ensure coherent electricity system development, including security of supply. Consents for generation projects below 50MW were determined in a more decentralised fashion by local planning authorities.

Since 1998 Wales has been entrained in a process of political devolution, along with Northern Ireland and Scotland, as an elected assembly – the National Assembly for Wales - took responsibility for functions previously exercised through Secretaries of State for Wales (Ministers of the UK Government). However, Wales receivedthe most limited devolution settlementof these territories (Cooke and Clifton 2005).By and large, the powers that had accumulated incrementally under successive Secretaries of State were handed to the NAW, with little discussion(Rawlings 2005).As these never included responsibilities for energy

policy, so the Assembly acquired few significant powers in the energy sphere, except where it intersected with competencies inplanning and economic development that were devolved (see Table 2, below). Nevertheless, devolution created untidy new fractures within the zone of qualificationfor energy infrastructure consenting, with responsibilitydividedbetween Welsh and UK Governmentsdepending on project size (megawatts of installed capacity) and location (see Table 3).

[Put Table 2 somewhere here]

[Put Table 3 somewhere here]

That this ragged distribution of responsibilities prompted little deliberation in 1998 may reflect then prevailing political beliefs that privatisation had depoliticised electricity, rendering it a normal commodity that markets could organise. Such beliefs proved short-lived (Kuzemko 2014).As elsewhere, successive Welsh Governments became exercised by wider agendas of cutting greenhouse gas emissionsas well asdomestic challenges of reconciling renewable energy expansionwith environmental protection, rural diversification and economic development. This problematisation of energy drove a desire to intervene. Welsh Governments created a series of energy strategies, mostly seeking to'maximise(s) the potential for renewable energy in Wales'[7] by attracting significant new investment (Welsh Government 2010; 2012; Hodson and Marvin 2013), but it has been difficulties arising in the planning and consenting of renewable energy infrastructure that have most politicised energy within Wales, and in turn pressurised the devolution settlement.

By the mid-1990s, rural Wales had become an important focus for wind farm development, but increasing public opposition led to a declining proportion of projects receiving consent

from local planning authorities (McKenzie-Hedger 1994).Inheriting this problematic situation, the Welsh Government sought to use one of the key tools at its disposal – its powers over planning policy - to create strategic-scale spatial policy guidancethat would reconcile desires to expand renewables with the containment of environmental impacts. The drivers and problematic process of creating this policy have been explained elsewhere (Cowell 2007; Stevenson 2009) and will not be repeated here. The resulting policy guidance – *Technical Advice Note 8: Renewable Energy* – was issued in 2005 (WAG 2005), and two elements are especially important for the analysis here:

- It demarcated on a map of Wales seven 'Strategic Search Areas' (SSAs) in which there was to be a presumption in favour of large-scale wind energy schemes (25MW or more), with restrictions on such developments elsewhere (see Figure 1);
- It was suggested that these SSAs together could accommodate at least 800MW of new capacity, to help meet the (then) 2010 renewable energy targets;

[Insert Figure 1 somewhere near here]

The Welsh Government could not (then) alter the fact that actual consenting powers remained with local and national government levels,but rather used TAN8 to add additional spatial tests for the acceptability of large-scale on-shore wind projects. Viewing it as a zone of qualification (after Barry 2006), alerts us to the way in which the TAN8 zoning strategy sought to impart certainty and consistency to corporate investment and planning decisions on larger wind projects across Welsh territory. However, if certainty and consistency were the goal,the material form of industryresponses to TAN8, the public reactions and central

government actions destabilised the demarcationsand judgements around which TAN8 had been constructed.

Wind energy developers were initially hostile to the way in which TAN8 served to restrict their sitingoptions, but ultimately channelled a significant number of large-scale wind farm proposals towards the SSAs. Projects totalling more than 2000MW of capacity were put forward, leading the Welsh Government to increase its aspirations for development of this technology by 2020 (WAG 2010). If stabilising the conditions for wind farm investment was a key goal of setting up the SSAs, then '(t)hose lines have served their purpose'[8]. This up-scaling arose from the availabilityof higher capacityturbines deployed in larger wind farm projects.

However, the mounting scale of electricity infrastructure development generated effects that also increased the intensity and reach of opposition. Consultation on the draft TAN8 policy in 2004-5 had attracted significant criticism from individuals, communities and countryside NGOs concerned about wind energy projects concentrating in the SSAs (Cowell 2007). Discontent increased again as actual wind farm proposals came forward, but became particularly intense once it became apparent that connecting this new capacity to the grid could require major new high voltage lines. This 'brought a whole new constituency into the debate'[9], beyond the visual envelopes of the SSAs. Protests at theSenedd were just part of wider actions, as opposition groups challenged the wind farm and grid infrastructure proposals in the consenting process, thus triggering public inquiries, while also acting on formal political institutions. In mid-Wales, protesters were successful in fomenting electoral change as politicians at local, Assembly and UK levelfell to candidatescritical of wind energy,

strengthening the challenge at UK level to the wider governmental support for on-shore wind.

Pervading the conflict was significant ambiguity about responsibility. The Welsh Government's interventions were clearly causal in the emergenceof large concentrations of wind energy in mid-Wales, but the up-scaling of projects stimulated in part by their spatial strategy meant that much of the capacity coming forward was in projects over 50MW and thus would be determined by central government, not Welsh local planning authorities. The Welsh Government responded to the controversy by announcing caps on the wind power capacity that each SSA should accommodate, only to cause panic among wind energy developers and raise further questions about the Welsh Government's power to act.

This ambiguity was magnifiedby perceptions that the UK government was largely unresponsive to ideas that Welsh institutions should steer energy infrastructure development. For the UK, energy remained an exceptional category of development in the context of devolution. When the 2008 Planning Act instituted 'fast-track' processes for consenting major infrastructure, most of its provisions (for transport projects, waste management facilities etc.) applied only to England,*except for electricity infrastructure*, where they also applied in Wales. Furthermore, to guide consenting under the 2008 Act process, central government released National Policy Statements, identified as 'the primary decision-making policy document ... on nationally significant' infrastructure in England and Wales' (DECC 2011b, para 1.5.1).Although the NPS on renewable energy expressed the expectationthat applicants would take policies like TAN8 'into account when working up their proposals':

> ‘(w)hether an application conforms to the guidance or the targets will not, in itself, be a reason for approving or rejecting the application’ (para 2.2.1).

The significance of this statement has been much debated. Certainly, the Welsh Government, in their NAW Inquiry evidence, represented it as allowing UK decision-makers to‘ignore’TAN8. Arguably, the text above exposes the longer-standing but previously latent divergence of rationalities that underpinned the overlapping zones of qualification in England and Wales. Whereas Welsh Governments have been supportive of spatial steering by the state, UK central governments have traditionallyseen such action as undesirable interference in the siting decisions of commercial actors (e.g. DECC 2011a, p.27).For UK central government, a strategic logic of market decisions and system security should be pre-eminent in adjudication of major energy infrastructure consents, coupled to an enduring doctrine of reviewing each application ‘on its merits’, and which oughtnot to be pre-empted by compliance with planning policies. However, by making this divergence in rationales (and their hierarchical relationship) more explicit, the NPS also made them more susceptible to argument.

4.2 Arguments aboutchange

Welsh Government politicians had regularlyquestionedWales’s limitedconsenting powers over major energy infrastructure and made requests to central government for change.[10]Such requests were always rebuffed. By 2011, however, the mounting controversy around wind and grid infrastructure intensified pressure for change. As a result, the

distribution of decision-making powers between England and Wales became a key question at two inquiries.

NAW Energy Policy Inquiry

The first inquiry was an opportunity for Assembly Membersto respond to the mounting controversy and scrutinise energy and planning policies in Wales. In practice, the NAW Environment and Sustainability Committee framed the inquiry questions in instrumental terms: 'what are the implications for Wales if responsibility for consenting major onshore and offshore energy infrastructure projects remains a matter that is reserved by the UK Government', including how might it affect achievement of the Welsh Government's goals for renewable and low carbon energy development and greenhouse gas reductions (NAWESC 2012, p.59)?

The Welsh Government established the case for acquiring consenting powers as follows, linking together a number of rationales:

> 'We consider that executive powers to grant consent[11] for large power stations ... should be a matter for the Welsh Ministers. We believe that it is anomalous that Wales is the only devolved administration in the UK not to have these powers, and under current arrangements we do not have the necessary tools to deliver our policy aspirations in an integrated and streamlined way' (NAW Inquiry submission, para 37)

A key rationaleis 'parity' i.e. asserting that the Welsh Government should, on the basis of an equal standing, have the same powers as devolved governments in Scotland and Northern Ireland. Beyond this, however, much argumentemphasised 'delivery'. Evidence statements led withaccounts of the importance of major new energy infrastructureinvestment, in

Wales, to meeting EU, UK and Welsh decarbonisation objectives.This was linked to procedural arguments, that devolution of powers would help the Welsh Government to realise 'a faster, more streamlined planning system': in effect, by facilitating tighter procedural coordination (see also Welsh Government 2012).[12]Streamlining wasalso linked to greater responsiveness to territorial concerns, with the Welsh Government arguing that devolutionallowed the delivery of'opportunities for the people of Wales', with a 'consenting regime that is both attuned to the issues of the region it serves and developed in response to the locally sensitive and specific planning guidance' (para 38).

Given the controversy around wind energy development, and the stymied progress of individual infrastructure projects, it is unsurprising that the NAW inquiry was dominated by voices critical of TAN8. Moreover, relatively few inquiry participants volunteered firm rationales for major energy consenting powers to be devolved.

Although major energy companieswere known to differ in their attitudes to devolution, there was actually remarkable commonality in their inquirysubmissions. Industry actors almost invariably expressed 'neutrality'[13]towards the allocation of powers: as Scottish Power Ltd explained, 'we are keen to work positively ... with whichever consenting authority has responsibility for energy projects in Wales' (para 9; see also RWE, West Coast Energy).Instead, narratives were dominated by specifying the qualities that any future zone of qualification should display. Echoing the Welsh Government, they emphasised that the UK renewable energy and decarbonisation targets required large-scale investment – '£200 billion worth of investment is needed ... by 2020' – and stated that 'certainty and stability within the planning system is the critical factor in ... ensuring that these much needed projects are delivered' (Scottish Power, *op cit*,para 9). Indeed, 'without planning

applications being considered within a reasonable timescale, investors could ultimately turn to alternative markets where there is greater certainty' (*op. cit*. para 7; see also RWE).Such threats were linked to criticisms that in Wales 'the delivery of wind farm projects remains slow and unpredictable' (REUK Cymru), with devolution presented as 'complicating' investment in Wales (RWE).

This persistent stress on 'certainty' and 'stable' and 'predictable' regulatory regimes casts a warning over the extent of change that devolution should bring to the zone of qualification. Should devolution occur the Welsh Government was encouraged to create a consenting regime which resembled the 2008 Act system operating in England: i.e. decisions should be taken centrally in Wales by Welsh Government Ministers, not local authorities (REUK Cymru), and made swiftly within streamlined processes, with fixed time scales. Industry actors recognised that supporting TAN8 was integral to the present round of wind energy infrastructure investment – 'we've got so much invested with it now, we have to support it'[14] - but pressed for spatial guidanceto allow more spatial flexibility, like the NPS of the UK Government (Scottish Power; REUK Cymru).

A central concern for many countryside NGOs and community groups was contesting grid and wind energy infrastructure and, relatedly, to see TAN8 reviewed, with arguments challenging its analytical weaknesses, legality and legitimacy.Pathologies with the blurred arrangements between Wales and England were also identified, with common themes being that the situation was 'dysfunctional': lackingconsistency andclarity, making coherent governance and public engagement difficult, and encouraging the trading of blame between Welsh and UK governments. Many articulated discourses of environmental injustice – for example, concern about Welsh landscapes 'being the dumping ground for ill-conceived ...

energy policies of successive [UK] Governments' (Volunteers for Abergorlech LLansawel and Rhydcymerau) – echoing the discourse of the Senedd protestors. But for few did greater autonomy for Wales presenta straightforward solution. Somelacked 'faith in decision makers at Welsh Government level' (Cambrian Mountains Society),felt that the 'integrated electricity distribution network between England and Wales' would undermine any scope for separate Welsh energy policy (Mochdre Action Group), or argued instead that local voices should be more prominent (e.g. Montgomeryside Against Pylons).

Among the more established environmental NGOs and statutory environmental bodies, references to 'clarity', 'consistency' and 'coherence' informed alternative arrangements for the zone of qualification. Devolution of consenting powers to Wales was presented positively for enabling greater territorial coherence in energy governance, in that a more comprehensive set of elements bound up with energy infrastructure – economic, environmental and social impacts; policy and delivery - could more readily be considered and coordinated. Procedural integration and comprehensiveness were the prime goals. Discourses of territorial coherence were often linked to a rebalancing of objectives within the zone this qualification, particularly that the form, location and quantity ofenergy development should be framed by the multiple qualities of Welsh territory rather thanby UK-wide market- and system-development logics.This environment-led rationale was expressed as giving greater weight to the 'ecosystem services' that Welsh environments provided (CPRW), or that siting decisions should be steered by environmental 'limits'or 'capacity' (Environmental Agency).[15]

In their report, the majority of the Committee supported the Welsh Government 'in its call for greater devolution of energy powers', upholdinga conjunction of delivery and

accountability arguments, that acquiring additional powers over energy consenting will 'make the system simpler for developers', 'help local communities by being clear about who is responsible for what', and facilitate the creation of 'a single, streamlined and transparent process for Wales' (NAWESC 2012, p.13).

The Silk Commission

Arguments developed for the NAWInquiry re-appeared, in reworked form, in the Silk Commission (e.g. Welsh Government 2013). Institutionally, however, the Silk Commission had a different governmental status. Whereas the NAW Inquirywas created by the National Assembly to scrutinise the Welsh Government, the Silk Commission was set up by the UK Government and tasked with examining the boundary between devolved and non-devolved powers, and recommending improvements. The contours of the zone of qualification around electricityinfrastructure were thus just one topic of consideration, alongsidefiscal powers, the case for a separate legal system, policing and so on.

A further distinctive feature of the Silk Commission was the greater visibility of the UK government which, in its written and oral evidence[16], presented a detailed articulation of the case for the status quo, thereby revealing the values that should discipline any calls for change. In a clear discourse overlap with major energy businesses, achieving the 'UK's transition' to a low carbon energy mix required significant investment 'across the country', but therefore '(m)aintaining a strategic, single GB-wide approach is key to ensuring a stable, long-term policy framework to facilitate necessary private sector investment'. Again, we see consistency and stability being emphasised, but as qualities exemplified by current

arrangements: '(w)e consider that the current unified planning regime for England and Wales provides a stable platform for investment in major new infrastructure both now and in the future'. The UK Government also drew on the infrastructural inheritance to defend the status quo: '(e)nergy networks across the Welsh/English border are substantially integrated ... and maintaining a unified regime would facilitate further development of this important infrastructure'. The UK Government was implacable in seeing no merits – political, procedural or environmental – that were better served by giving powers to the Welsh Government. The current 50MW threshold was fine, as most schemes that are larger than this 'are of sufficient importance and scale to be considered nationally significant'. The present regime was no less able to achieve accountability to local publics, to take account of TAN8, and to 'balance local accountability and local impact with overall coherence and national need'. The frame of reference for 'national'is the UK, with Welsh territoryviewed as integral but not distinctive.

As at the NAW inquiry, energy companies expressed neutrality towards 'constitutional issues', but re-iterated that '(t)he key driver of the development of energy infrastructure projects is a long-term and stable regulatory environment' (SSE, see also RWE). Significantly, by the time of the Silk inquiry established environmental organisations could also be found rationalising their longer-standing, pro-devolution arguments for environmentally integrated procedures with pro-business narratives of delivery. Thus, for statutory body Natural Resources Wales (NRW), devolution would enable comprehensiveness, simplification (by linking in consents for associated infrastructure, like substations), and making coordinated policy more achievable. However, the merits of such moves were that 'any change in the devolution settlement needs to provide clarity, certainty and consistency

for developers and decision makers'. Bounding zones of qualification more clearly with Welsh territory were advantageous becausethis would both reduce 'complexity and risk to delivery', andenhance opportunities for energy policy to be 'integrated with the needs of other activities and uses of our natural environment where those responsibilities are already devolved'. Other groups echoed these arguments (e.g. Royal Society for the Protection of Birds; FoE Cymru, Wales Trade Union Congress).

4.3 (Re)creating boundaries

At various points in this analysis, one can see how the effect of devolution within systems of energy infrastructure governance has been to raise awkward questions for the maintenance and bounding of zones of qualification. They featured in the emergent tensions between the spatial steering of TAN8 and the UK Government's preferred approach to consenting. They reverberated through the arguments at the two inquiries, in which desires to construct a zone of qualification with 'coherence' and remove (undesirable) variation, was informed by perspectives that placed different goals and territories at their centre. Importantly, these positions are not easily amenable to technocratic mediation, in that there is no single metric that can easily weight their relative value, and bring them into alignment.

So it proved for the Silk Commission which, in recommending improvements, sought to apply a diverse set of principles: accountability, clarity, coherence, collaboration, efficiency, equity and stability (Commission on Devolution in Wales 2014, 3.3.3). Full devolution of all energy infrastructure consenting powers was considered positive for enhancing the Welsh Government's accountability for developments in Wales, and clarifying the role of planning

policy, but not to satisfy the principle of effectiveness: ‘a Wales-focussed energy strategy may not meet the needs of the wider United Kingdom’ (para 8.2.13), constructed again as achieving energy security. Instead, their recommendation was to increase the thresholds for energy generation project consents devolved to Wales to 350MW, onshore and offshore, with consenting for associated development like substations or grid connections aligned with whoever has responsibility for the main project.[17]

One can see how dilemmas about how to balance diverse principles became translated into demarcations of physical, project scale. Indeed, the Silk Commission’s recommendations may have been strongly shaped by consideration of the particular infrastructure objects that ought to be governed at a Welsh level. A 350MW threshold embraced the majority of renewable energy schemes, including emerging ideas for tidal lagoons, but with ‘larger schemes of strategic importance to the United Kingdom remaining with the UK Government’ (para 8.2.20).However, assertions of ‘national’ or ‘strategic importance’ are not defined, and the compromises of the Silk position leave it vulnerable to further contestation. To understand whether it might hold, one needs to look at the ramifications of other boundary-creating and re-scaling processes outside Wales.

In practice, the UK Government agreed swiftly to act on the Silk Commission’s recommendations, making provision for devolving electricity infrastructure consenting powers to Wales to be included in legislation (HM Government 2015). Given the UK Government’s implacable defence of the status quo, this move must be seen less as a Damascene conversion to the substantive arguments for Wales-level territorial integration than a response to the Scotland Independence Referendum of September 2014. This eventcreated intense concern among the major UK political parties about the management

of the unionof the UK, and raised the traction of Welsh Government calls for parity with Scotland (see Table 2).

However, other shifts have kept the boundary of technological zones under contention. In England, public opposition to onshore wind increased in political salience with the formation of Conservative-dominated governments from 2010, more sensitive to rural electoral concerns, since when a series of steps have been taken to dismantle support for this technology (Cowell et al 2015). Market support for onshore wind energy (organised on a broadly UK-wide basis [Cowell et al. 2015]), has been reduced and scheduled for removal. In planning, large on-shore wind farms have been demoted from their status as 'nationally important' infrastructure, most significantly by moves to pass powers for consenting such projects over 50MW away from central government to local government, thus facilitating a diversity of local social and political responses to enter this zone of qualification. Such English 'localism', for wind energy, heightens the contrast with Welsh centralisation, as discussed further below (Barton 2015).

5.0 Discussion –is re-scaling political?

A starting proposition for this analysis was that analysing politics around the re-scaling of energy technological zones provides insights into obduracy and change in systems of provision. However, just because formal political institutions like national and devolved governments are involved, does not necessarily mean that energy infrastructure development has become significantly politicised. It remains important to assess which

objects have been brought ‘into the realm of contingency and deliberation’ (Hay 2007, cited in Kuzemko 2014, 262; Barry 2001) and which have not.

In this case, within the technological zones of electricity infrastructure, attention has focused almost entirely on zones of qualification. Nobodyat the Wales inquiries suggested splitting the governance of electricity grid and distribution networks across the English-Welsh border, and debate on the potential for unbundling market support for renewables to give some steering capacity to Wales has been limited. Disaggregating markets was not on the agenda. Contestation has focused on who should exercise consenting powers in Welsh territory, and how planning evaluations ofnew electricity generation and grid projects should be conducted. Indeed, the Welsh Government came to emphasise the absence of ‘technical or engineering objections’ to its devolution aims (2013, 22; see van der Vleuten and Hogselius 2012).

Across this sphere of discussion, the analysis has revealed ‘delivery of energy infrastructure’to be a master discourse. Narratives begin by stressing the scale and urgency of carbon reduction and renewable energy targets, extrapolated (often unquestioningly) to how much private sector investment is required to ‘deliver’ against these goals, then proceeding to specify the qualitiesrequired of a zone of qualification to be consistent with such investment. For many key actors, this required a system that can reach decisions swiftly, on large volumes of new capacity and thereby deliver certainty for private investors (Welsh Government 2012). This master discourse was used to justify different approaches to consenting, including those emphasising territorial integration with environmental, economic and social agendas in Wales, and to justify retaining the status quo or devolving powers to Wales. *But that is the point*; participants with different views on the reach and

organisation of the zone of qualification felt it necessary to explain how their preferred arrangements would support infrastructure delivery. Sovereignty principles were raised - in cross-examination Welsh Ministers often asserted stridently that '(t)he people of Wales have the right to manage their resources'[18] - but such discourses are scarcer in written submissions.

A second feature of the evidence is the relative absence of arguments that devolution of energy consenting powers to the Welsh Government could foster more radical sustainable energy pathways, based on smaller-scale, more de-centralised and diversely owned energy generation and demand management projects. These arguments were heard[19], often from community and local environmental groups calling for alternatives to large-scale on-shore wind, but tended to be treated as an adjunct of the core concerns. Across the two inquiries, few parties argued that greater autonomy for Wales was desirableto enable effective resistance to industrial-scale fossil and nuclear energy generation: Friends of the Earth Cymru and Eco Cymru were rare exceptions. In contrast to Scotland, where devolution has empowered Scottish Governments to resist new nuclear power stations in its territory(Cairney 2012), almost all the main parties to the NAW and Silk inquiries accepted that consenting powers for nuclear should reside with central government, and they attracted little discussion.

A number of factors combined to delimit the space of contestation. Some are explicable in terms of traditional conceptions of agenda framing. The inquiry venues, formatsand remits framed the questions in narrow, often very instrumental terms; an example of how 'external scrutiny' can be managed in ways that do not increase wider reflexivity but channel it in particular directions (Barry 2002, 280). It is notable that groups opposing wind energy in

mid-Wales made use of political channels outside such institutions. In both inquiries, much emphasis was placed on the 50MW consenting threshold when, arguably, this has only partial relevance to orchestrating the kinds of infrastructure that a more decentralised energy pathway would entail. Indeed, some interviewees[20] regarded the Welsh Government's conflicts with the UK over the devolution of consenting powers as diversionary politicking, averting attention from what could be done with existing powers to knit together smaller scale sustainable electricity, heat, storage, demand management and transport.

These outcomes also alert us to a wider analytical issue – the partiality of politics shaped by technology controversies. It is one thing to recognise that the materiality and social effects of infrastructure development can create controversy that gives rise to new actors and a multiplication of stakes (Callon et al 2009; Barry 2013a). TAN8 undoubtedly precipitated an array of effects and responses. However, this does not mean that a diverse array of alternative positionsautomatically appear and become organised into political processes. The wind energy controversy to date has illuminated the weak organisation of groups promoting radically different energy pathways in Wales; both the weak state of anti-nuclear politics and, echoing the rest of the UK, the tendency for community energy sector actors to be concerned mainly with facilitating local project development rather than changing structural policy (see Community Energy Wales submission to the NAW inquiry; also Seyfang and Haxeltine 2012). Opposition to the large-scale wind and grid projects in mid-Wales fomented a sense of injustice and desires to reverse these infrastructural developments (Mason and Milbourne 2014), but the wind-, project- and countryside-centred nature of these oppositional groups, and their focus on specific zones of qualification like TAN8,

meant that although they argued that alternative technologies should be given more consideration, cultivating alternatives was rarely central to their activities.If wind energy technology became political, the contours of the space of contestation were highly *uneven*.

In this context, given the dominant emphasis on delivery, it is unsurprising that major energy companies have proven especially effective in mobilising their conceptions of how any future zone of qualification should work. They are incumbent actors in the technological zone, with major infrastructure projects already in the consenting pipeline.Energy business leaders have enjoyedimproved access to policy-making in Wales, within the inquiries and in other governance arenas,[21] and an alignment of interests with the Welsh Government around green energy as a driver of job generation. One result is that the Welsh Government has been keen to use its planning powers to introduce streamlined and centralised consenting procedures, echoing UK norms (Welsh Government 2012; 2013): applying these to energy projects up to 350MW once legal provision for devolution is made, but also extending them to include projects of 25-50MW capacity (under the Planning [Wales] Act 2015). There also remains a keenness to simplify the multiple environmental and other consenting and licensing processes required for infrastructure development(NAWESC 2012, p.24-25; Welsh Government 2012b).[22]For all that the boundary-making processes discussed above were potentially open to allow a wider array of factors to enter the zone of qualification, the result is an intensification and narrowing of decision-making procedures for larger projects: around industry's conception of clarity and consistency.

6.0 Conclusions

The research presented here demonstrates the value of giving close attention to the intersection of politics and re-scalingin energy system transitions, 'not simply as a contextual backdrop for energy policy, but as constitutive elements of change and continuity' (Moss 2014, 1445). In Wales, we can see causal effects running in multiple directions. The 1998 devolution of planning policy powers enabled Welsh Governments, faced with public conflict around on-shore wind farms, to respond by creating new spatial strategies to steer the further expansion of these technologies. However, the subsequent up-scaling of infrastructural projects and impactsfurther problematised relations of accountability and control, creating pressures for change which – at the time of writing – was leading to the devolutionof major energy project consenting powers from the UK to Wales for the first time.

Barry's concept of technological zones has been shown to be useful for analysing what governance re-scaling entails when applied to infrastructural systems like energy, and for posing questions critical to understanding the scope for change. The first set of questions is why 'particular materials and sites' come to be 'of political significance' (Barry 2014, 27) at particular times, while others do not? The materialities, sensory effects and siting geography of wind energy technologies have shown a propensity to disrupt existing environments and social and economic relations to them, creating conflicts, especially in rural areas, as have major high voltage grid projects (Szarka et al 2012). The political consequences of these conflicts undoubtedly threw *some* of the rules of the game into contention. Yet we can also see how contextual conditions shape the way in which technologies become political (Kuzemko 2014). The research has provided rare insights into the stance of business actors

in devolution processes. Although they expressed no wish to become involved in constitutional debates their framing of the scope for change around delivery proved very influential, notably on the way that the Welsh Government has chosen to organise its re-territorialised zone of qualification. The research also provides an illustration of how more pervasive depoliticising narratives of crisis and decarbonisation (Flinders and Wood 2014; MacKerron 2009) become reproduced. However, the boundaries of technological zones across the English-Welsh border remain problematic, creating motors for further change; whether that is energy business leaders contemplating becoming more assertive advocates of devolution, to create spaces relatively insulated from the UK government's reduced enthusiasm for renewables (Clubb 2015); or the NAW investigating the wider scope for energy transitions in Wales, in which the distribution of powers beyond infrastructure consenting are being questioned[23].

Focusing on the production of technological zones leads to a second set of questions, and one of the fundamental issues of infrastructural development, the extent to which it is possible or desirable to keep space – as territorial complexity – within bounds or at bay. As the research has shown, governments can respond to manage potential tensions between delivery and spatial complexity: in some instances adjusting zones of qualification to allow greater sensitivity to contextual conditions, perhaps allowing environmental constraints to define development trajectories; in others, seeking to keep such elements subordinate to 'strategic decisions' about 'need', which emphasise the narrow instrumental goals of the infrastructure concerned (Cowell and Owens 2006; Cotton and Devine-Wright 2012). Such governance questions are not straightforwardly reducible to (or resolved) by adjusting the 'level' at which powers may lie, sincethe case has shown that a re-scaling of authority

towards smaller-scale political units does not straightforwardly lead to increased political sensitivity to contextual conditions.

The conceptual framework adopted here also suggests the wider importance of examining processes of *boundary creation* when addressing re-scaling. Barry (2001) explained how negotiating the edge or extensions of technological zones can be difficult, potentially admitting wider factors that disrupt the smooth circulation of entities within (Kama 2014), but the construction of new boundaries that can arise in processes of governance re-scaling creates analogous issues. Plural and incommensurable values may enter the equation (national sovereignty, market discipline, project delivery, environmental and social sensitivity); issues not easily accounted for within the neatening logics of actor network theory or governmentality. In such settings, border creation between spheres of jurisdiction may depend less on the simple application of principle than on the differentiation of objects, their problematisation and the significances attached to them (see also Faulkner 2009). Debates in Wales over whether 25MW, 50MW or 350MW neatly demarcates what is 'nationally significant' electricity infrastructure from the rest are an illustration of wider tendencies to arbitrate distinctions of value with claims about scale. Analysts of energy transition, and especially of the prospects of more decentralised energy solutions, may find it useful to view their research agenda in terms of how far new boundaries are created in technological zones, for countries, cities or communities; so too may analysts of political devolution. Seeing technological zones for systems of provision like energy as composite – bundling metrological, infrastructural and zone of qualification dimensions – also helps to decipher how notional moves towards local autonomy unfold alongside the maintenance of wider connections (van der Vleuten and Hogselius 2013).

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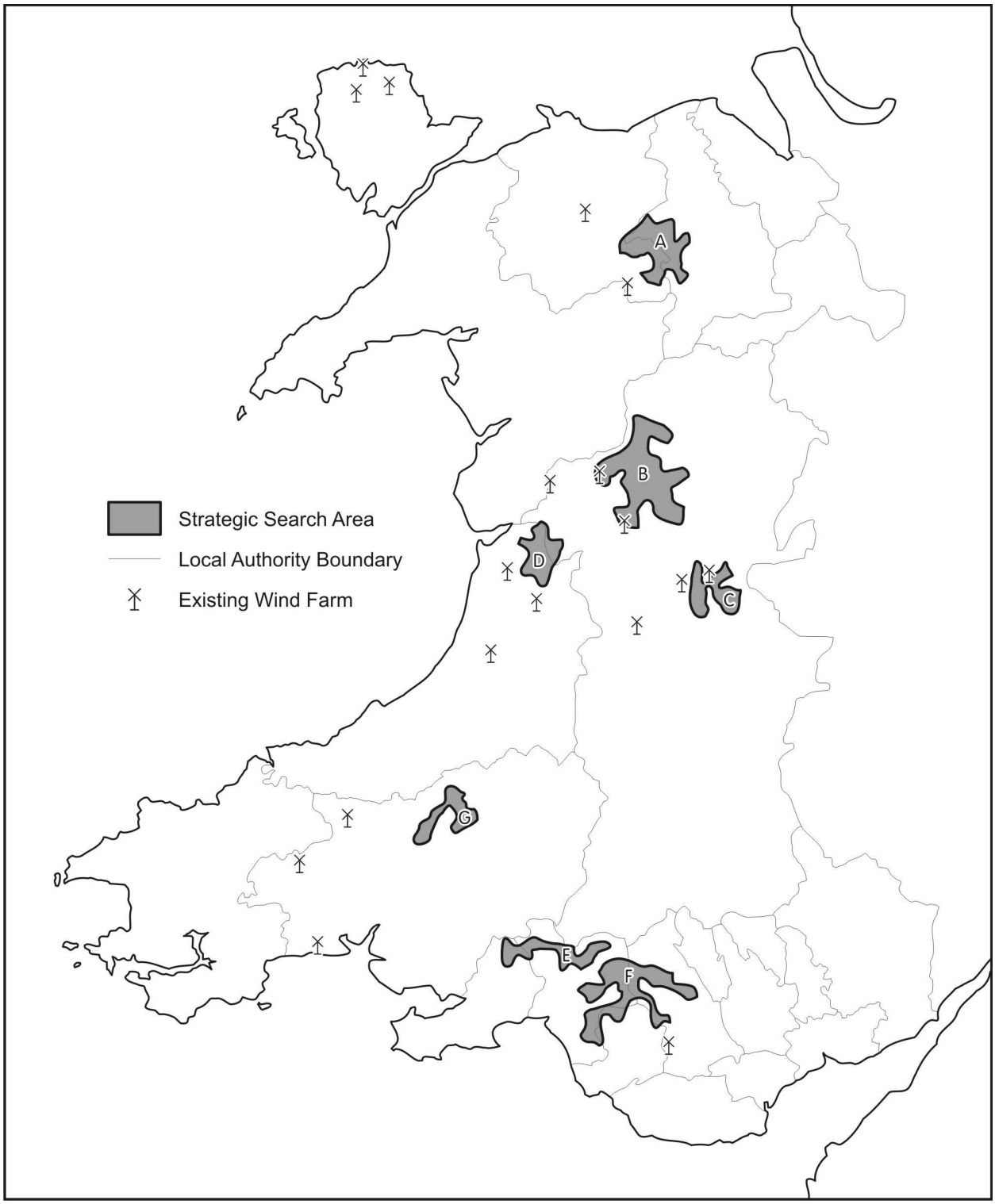
Figure 1: The spatial strategy of Technical Advice Note 8



Source: after WAG 2005.

Table 1: The dimensions of technological zones (after Barry 2006)

- **Metrological zones** - common measurement standards to make information comparable;
- **Infrastructural zones** - common connection standards so that systems of production, transmission and communication can be integrated;
- **Zones of qualification** – processes of transparency and evaluation, to ensure that the qualities of objects and practices can be assessed, against more or less common criteria.

Table 2: Overview of the formal distribution of energy-related powers in the UK, 1998-2015

Country	**Provision of market support for renewable energy**	**Planning and consents (onshore)**	**Planning and consents* (offshore)**	**Economic development spending**
UK Govt.	Full competence (for England, Wales and Scotland)	Full policy competence for England, partial for Wales; full competence over major projects (50MW plus)	Full competence for English and Welsh Waters (subject to Welsh exceptions, above)	Competence for England
Northern Ireland	Fully devolved	Fully devolved	Fully devolved	Fully devolved
Scotland	Scope to shape delivery of some schemes	Fully devolved	Fully devolved	Fully devolved
Wales	No powers	Partial powers over planning policy and consent for smaller schemes (below 50MW)	Power to determine applications up to 1MW (exception under Transport and Works Act 1992)	Fully devolved

*We set aside the issue of marine licensing powers, and consenting for onshore connections, for simplicity. The offshore regime applies principally to applications in UK territorial waters (i.e. up to 12 nautical miles and designated Renewable Energy Zones).

Table 3: Electricity Infrastructure Consenting Powers in Wales (August 2014)

Energy Project	Consenting Powers
Generation onshore, of 50MW or below	Local Planning Authority under Town and Country Planning Act 1990, unless called in or appealed following refusal
Generation onshore over 50MW	Central Government for applications prior to 01.03.2010, under Electricity Act 1989; post 01.03.2010 under the Planning Act 2008 as amended by Localism Act 2011
Generation offshore of 1MW or less	No consent needed Marine Licence determined by Natural Resources Wales up to 12 nautical miles; MMO beyond 12 nautical miles.
Generation offshore 1MW to 100MW	Welsh Government under the Transport and Works Act 1992, **or-** Marine Management Organisation Under the Electricity Act 1989
Generation offshore over 100MW	Central Government under the Planning Act 2008 as amended by Localism Act 2011
Grid network	Central Government for applications of 132kV or over, under the Planning Act 2008 as amended by Localism Act 2011; under 132kV under Electricity Act 1989;
Substations	Local Planning Authority under Town and Country Planning Legislation

Source: for more detail, see NAWESC 2012, p60-62; Barton 2015.

[1]BBC News, 'Mid and west Wales protesters at Senedd', http://www.bbc.co.uk/news/uk-wales-13498707, accessed 23rd January 2015.

[2]The Welsh Government is the executive of the devolved government in Wales and, technically speaking, has only used this title since 2011. Welsh Government is used throughout in this paper for consistency and simplicity.

[3] Written Statement by the Welsh Government, *Planning for Renewable Energy in Wales*, 17th June 2011; issued on behalf of the First Minister.

[4] Source as footnote 3.

[5] For the Silk Commission, the Committee was established in October 2011 with Part I of its work examining the financial powers of the National Assembly but the analysis presented here is concerned mostly with 'Part 2', which looked at the boundary between devolved and non-devolved powers in an array of sectors, and worked from November 2012.

[6]Transcripts are available for the NAW Inquiry but only minutes for the Silk Commission. In referencing inquiry data, information taken from submitted evidence is cited by the author in the main text. Other sources are given as footnotes.

[7]First Minister Carwyn Jones, NAW Inquiry session 15th March 2012.

[8] Planning officer, NAW Inquiry session 25th April 2013, transcript p.33.

[9] Planning Officer Interview, 2011.

[10]For an early example, the November 2004 Tripartite Working Group included an informal survey of key energy stakeholders which apparently found in favour of the Welsh Government having more role in consenting (Silk letter 6th June 2013).

[11]What the Welsh Government was seeking at this stage was executive devolution (Welsh Government 2013). It is a transfer of executive authority, not a change in the legislation, but would achieve legal parity with Scottish Ministers.

[12] At this point, September 2011, the Welsh Government were pressing only for the thresholds to be raised from 50MW to 100MW in capacity on land and sea, mainly because 100MW is a significant scalar threshold where consenting responsibility is passed to the Marine Management Organisation. Welsh Ministers were not limited to the 100MW threshold by the time the NAW inquiry got going (Carwyn Jones, First Minister, NAW Inquiry evidence session 15th March 2012).

[13] Interview, trade association, 2011.

[14] Interview, major energy company, 2011.

[15]See NAW Inquiry Sessions 23rd November 2011, 12th January 2012.

[16] The oral evidence session was 30th September 2013, the written evidence is undated.

[17] The Silk Commission also endorsed the suggestion made by numerous parties, that there should be a statutory obligation for the UK government to consult the Welsh Government and take account of Welsh planning policies when granting consents for projects over 350MW, thus forging connections between the zones of qualification.

[18]First Minister Carwyn Jones, NAW Inquiry evidence session 15th March 2012, para 69, para 131. Plaid Cymru's submission to the Silk Inquiry also emphasised Welsh sovereignty over resource development in its territory.

[19] From Eco Cymru and Montgomeryshire Wildlife Trust, and NAW Inquiry evidence session involving Llangattock Green Valleys, Commissioner for Sustainable Futures and Ecodyfi on 9th February 2012.
[20] Interview, Energy NGO, 2011; Interview, Welsh politician, 2011; Interview, academic, 2013.
[21]Notably in appointing a manager from RWE to chair its Energy and Environment Private Sector Panel (Welsh Government 2012).
[22] Also NAW Inquiry evidence session 15th March 2012.
[23]http://www.senedd.assembly.wales/mgIssueHistoryHome.aspx?IId=13374, accessed 15th October 2015.